AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for testing ~~sources of random numbers~~ a random number generator in an electronic device, comprising the following steps:

Step one: Generation of a sequence of (Q+K)*L bits by the random ~~source~~ number generator, with Q, K and L being input parameters, the bits in the sequence being grouped in blocks of L bits, forming a sequence of integers between 0 and 2^L-l of length Q+K, the length being stored in ~~the~~ a table block[n], where n is between 1 and Q+K;

Step two: Calculating ~~the~~ a test parameter, denoted fTU~~; this second step comprising the following steps, referred to as~~ according to the following substeps 2.1 to 2.5:

2.1 Creation and initialisation of a table tab[i] of size 2^L

2.2 For n varying from 1 to Q, making the calculation: tab [block [n]] =n;

2.3 Initialising ~~the~~ a number Sum to 0;

2.4 For n varying from Q+1to Q+K, performing the calculation in two operations:

Add log(n-tab[block[n]] to Sum;

Make the calculation: tab[block[n]]=n;

2.5 ~~The~~ Setting the parameter fTU of the test ~~is given by:~~ to be

fTU= (Sum/K) /Log(2);

Step three: Calculation of the variance ~~per test parameter block~~, denoted Var, from the following expression:

$$Var = (1-z) * \sum_{i=1}^{\infty} \log 2(i)^2 * z^{i-1} - ((1-z) * \sum_{i=1}^{\infty} \log 2(i) * z^{i-1})^2$$

with log2(z) = log(z)/log(2) and z = $1-2^{-L}$

Step four: Calculation of ~~the~~ a function c(L,K);

Step five: Calculation of the standard deviation of the test parameter, denoted σ: σ=c(L.K)*√(Var/K);

Step six: Calculation of the parameter y; where y is determined from the rejection rate of the test fixed as an input, denoted ρ[[.]], ~~Y must satisfy~~ and satisfies the equation:

N(-y) = ρ,

where N is the normal density function;

Step seven: Calculation of the ideal mean value of the test, denoted E[fTU], given by the following formula:

$$E[fTU] = (1-z) * \sum_{i=1}^{\infty} \log 2(i) * z^{i-1}$$

~~with log2(z = log(z)/log(2) and z = 1-2-L~~

Step eight: Calculation of the bounds t1 and t2[[.]] ~~They are given by the equation:~~, where t1=E[fTU]-y*σ and t2=E[fTU]+y*σ; and

Step nine: ~~Result of the test:~~ Accepting the random number generator ~~being accepted~~ if the test parameter fTU is between t1 and t2, and ~~rejected~~ rejecting the random number generator in the contrary case,

~~the said method being characterised in that~~ wherein step four ~~consists of~~ comprises a calculation of the function c(L,K) which is valid whatever the parameters L and K.

2. (Currently Amended) A method for testing ~~sources of random numbers~~ a random number generator according to Claim 1, ~~characterised in that~~ wherein step four ~~consists of~~ comprises a calculation of the function c(L,K) which is valid in the case where the value of L is between 3 and 16 and the value of K is greater than $30*2^L$.

3. (Currently Amended) A method for testing ~~sources of random numbers~~ a random number generator according to Claim 1, ~~characterised in that~~ wherein step four consists of a calculation of the function c(L,K) which is valid for a value of L>16 and a value of $K>30*2^L$.

4. (Currently Amended) A method according to Claim 1, ~~characterised in that~~ wherein the calculation of the function c(L,K) contains nine steps:

1. Calculation of: $u=1-2^{-L}$ and $v=1-1/(2^{L}-1)$;

u and v being real numbers;

2. Creation of two tables tab1 and tab2 of size $60*2^{L}$;

3.1 ~~Execute~~ Initialize z=u, sum=0, z1=1;

3.2 For i ranging from 1 to $30*2^{L}$, repeating the two operations which are:

add log2(i)*z1 to sum, in which log2 designates the logarithm to base 2,

and calculate: z1=z1*z;

3.3 ~~Execute~~ Initialize tab1[0]=(1-z)*sum;

3.4 For i ranging from 1 to $60*2^{L}$,,

Execute tab1[i]=(tab1[i-1]-(1-z)*log2(i))/z;

3.5 Repeat steps 3.1, 3.2, 3.3, 3.4, replacing u with v and tab1 with tab2;

4. Calculation of the variance ~~per block~~ denoted Var;

4.1 ~~Execute~~ Initialize sum=0 and x=1;

4.2 For i varying from 1 to $30*2^{L}$, execute the following two operations:

Add $\log2(i)^{2}*x$ to sum and

Execute x=x*z;

4.3 Make $Var=sum/2^{L}-tab1[0]^{2}$;

5. Calculation of P(K)[[;]], as follows:

5.1 Make sum=0 and x=1;

5.2 For i varying from 1 to $30*2^{L}$[[:]], carry out the following three operations:

Calculate [[y:]]$y=u^{2}*(tab2[i+K-1]-tab1[i+K])*(tab2[0]-v^{i}*tab2[i])+u*tab1[0]*(tab1[i+K-1]-tab2[i+K-1])$

Add y*x to sum,

Execute x=x*u;

5.3 Execute $P(K)=u^{(K-l)}*sum$;

6. Calculation of P(1):

Same method as at step 5, replacing K with 1;

7. Calculation of Q(K), as follows:

7.1 Make sum=0, sum2=0 and x=1,

7.2 For i varying from 1 to 30*2^L:

Add $i*\log2(i)*u^{(i-2)}$ to sum2;

Execute the following three operations:

Calculate $y=u^2$ *(tab2 [i+K-l] -tabl [i+K])* ((i+k) *tab2 [0] $-v^i$*tab2 [i])-$2^{(-L)}$ *sum2) +u* (i+K-1) *tab1 [0]* (tab1 [i+K-l] -tab2 [i+K-1])

Add y*x to sum,

Execute x=x*u;

7.3 Execute $Q(K)=u^{(K-1)}*sum$

8. Calculation of Q(1):

Same method as at step 7, replacing K with 1

9. Calculation of c(L,K):

$c(L,K)=\sqrt{(1-2)/Var*(P(1)-P(K)-(Q(1)-Q(K))/K)}$

5. (Currently Amended) A method according to Claim 2, ~~characterised in that~~ wherein the function c(L,K) contains two steps:

Step one: Reading of the values of e(L) and d(L), e and d being real values, listed in the following table, for L between 3 and 16:

L	d(L)	e(L)
3	0.2732725	0.4890883
4	0.3045101	0.4435381
5	0.3296587	0.4137196
6	0.3489769	0.3941338
7	0.3631815	0.3813210
8	0.3732189	0.3730195
9	0.3800637	0.3677118
10	0.3845867	0.3643695
11	0.3874942	0.3622979
12	0.3893189	0.3610336
13	0.3904405	0.3602731
14	0.3911178	0.3598216
15	0.3915202	0.3595571
16	0.3917561	0.3594040

Step two:

Calculate the value c(L,K) using the formula:

$c(L,K)=\sqrt{(d(L)+e(L)*2^{L}/K)}$

6. (Currently Amended) A method according to Claim 3, ~~characterised in that~~ wherein the calculation of the ~~functions~~ function c(L,K) is effected by means of the following formula:

$c(L,K)= \sqrt{(1-6/\Pi^{2}+2/\Pi^{2}*(4*\log(2)-1)*2^{L}/K)}$

7. (Currently Amended) An electronic device for the self-checking of the physical integrity of a self-checking integrated circuit and checking the integrity of its random number generator, in order to ensure that the latter is functioning correctly in

general and does not exhibit any drift following changes in external parameters of malevolent origin such as an alteration by induced radiation, ~~in particular,~~ which performs the method according to Claim 1.

8. (Currently Amended) An electronic device according to Claim 7, ~~characterised in that~~ wherein the device performing the test is a portable device.

9. (Currently Amended) An electronic device according to Claim 8, ~~characterised in that~~ wherein the device is a chip card, a contactless card, a PCMCIA card, a badge or an intelligent watch.

10. (Currently Amended) An electronic device according to Claim [[1]] 7, ~~characterised in that~~ wherein an external device performing the test ~~consists of~~ comprises a machine or installation designed to test the correct functioning of random number generators incorporated in ~~the~~ said portable ~~devices~~ device.